UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,218	11/21/2007	Weizhong Yan	4202-02800	6632

30652	7590	07/19/2010

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ART UNIT	PAPER NUMBER
2464	

MAIL DATE	DELIVERY MODE
07/19/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/591,218	YAN, WEIZHONG
	Examiner	**Art Unit**	
	IQBAL ZAIDI	2464	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>27 April 2010</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,7,9,19 and 34</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☒ Claim(s) <u>2,3 and 35</u> is/are allowed.
6)☐ Claim(s) _____ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All   b)☐ Some * c)☐ None of:
        1.☒ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to applicant's amendment filed on April 27, 2010

for Application No. 10/591218.

2.   Claims 1, 7, 9, 19-34, are pending in this application. Claims 4-6, 8, 10-18 have

been cancelled.

Allowable Subject Matter

3.   **Claims 2-3, and 35** are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in
public use or on sale in this country, more than one year prior to the date of application for patent in
the United States.

5.   **Claims 34** is rejected under 35 U.S.C. 102(b) as being anticipated by Sainomoto

et al. (US 20020150114, Oct. 17, 2002) .

Regarding **Claim 34,** Sainomoto discloses a device comprising a first routing unit

configured to save a first relationship between a data packet identifier and a destination

port in a first routing table*(page 10, <u>receiving the packet</u> from the at <u>least one port</u>; a*

<u>first lookup unit</u> (first routing table)which uses header information contained in the

packet to judge whether the packet should be transmitted to the function unit, and adds

an identifier containing first route information corresponding to the function unit to the

packet in a case where the packet should be transmitted to the function unit; and a <u>first</u>

<u>relay unit</u> for transmitting the packet added with the <u>identifier to the transmission unit</u>);

and a second routing unit configured to save a second relationship between the

destination port and a transmitting port in a second routing table*(page 10, a second*

relay unit for receiving the packet from the transmission unit in accordance with the <u>first</u>

<u>route information contained in the identifier</u>; and a <u>second lookup</u> unit (second routing

table) which receives the packet from the at least one execution unit and uses the

header information to store second route information corresponding to a <u>destination</u>

<u>routing unit into the identifier</u>; and wherein the <u>second relay unit transmits the packet</u> to

the transmission unit, the transmission unit in accordance with<u> the second route</u>

<u>information</u> contained in the identifier; and the routing unit includes a transmission unit

for transmitting the packet to a destination port in accordance with the <u>second route</u>

<u>information contained</u> in the identifier).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   **Claims 1, and 19-24** are rejected under 35 U.S.C 103(a) as being unpatentable over Sainomoto et al. (US 20020150114, Oct. 17, 2002) in view of Cassiday et al. (US 7042837, May 9, 2006)   hereinafter (Cassiday et al).

        Regarding **Claim1,** Sainomoto discloses a method comprising receiving a data packet comprising a data packet identifier *(page 3, par (0033), see Fig 3, shows identifier insertion format to a packet)*; identifying a destination port corresponding to the data packet identifier from a first routing table, wherein there is a first relationship between the data packet identifier and the destination port in the first routing table*(page 10, receiving the packet from the at least one port; a first lookup unit (first routing table)which uses header information contained in the packet to judge whether the packet should be transmitted to the function unit, and adds an identifier containing first route information corresponding to the function unit to the packet in a case where the packet should be transmitted to the function unit; and a first relay unit for transmitting the packet added with the identifier to the transmission unit)*; and transmitting the data packet via a transmitting port corresponding to the destination port based on a second relationship between the destination port and the transmitting port in a second routing table*(page 10, a second relay unit for receiving the packet from the transmission unit in accordance with the first route information contained in the identifier; and a second lookup unit (second routing table) which receives the packet from the at least one*

execution unit and uses the header information to store second route information

corresponding to a <u>destination routing unit into the identifier</u>; and wherein the <u>second</u>

<u>*relay unit transmits the packet*</u> *to the transmission unit, the transmission unit in*

accordance with<u> the second route information </u>contained in the identifier; and the routing

unit includes a transmission unit for transmitting the packet to a destination port in

accordance with the <u>second route information contained</u> in the identifier).

Sainomoto discloses all aspects of the claimed invention, except *the transmitting*

port is used to transmit other data packets regardless of whether a failure is associated

with the destination port.

Cassiday is the same field of invention teaches the transmitting port is used to

transmit other data packets regardless of whether a failure is associated with the

destination port *(column 2, a row in the routing table corresponds to a neighboring node*

and at least one interconnect link for transmitting data to that node. These components

<u>*enable the node*</u> *to continue with the <u>flow of a data packet</u> to a <u>destination port</u> without*

(regardless) when an interconnect link along the path to that <u>node fails</u>).

Sainomoto and Cassiday are analogous art because they are from the same

field of endeavor of access to a service device.

It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the teaching of Sainomoto to include the teaching of Cassiday

because it is providing techniques for enabling the continued, realtime, transmission of

data packets in a data network when a link in the network has failed.

Regarding **Claim19,** Sainomoto discloses all aspects of the claimed invention,
except *the port number of the transmitting port is set to a port number of the destination*
port in the second table when the transmitting port is operating normally.

Cassiday is the same field of invention teaches the port number of the
transmitting port is set to a port number of the destination port in the second table when
the transmitting port is operating normally *(column 6, The packet is modified to mark it*
as a failover packet by setting a failover-pkt bit. The CRC is then calculated (based on
the modified packet) and attached. The ONID is embedded into this CRC in the same
manner as Sequence numbers are embedded. This is used to uniquely oppositely mark
the originator of the failover packet. AS will be seen, the termination node will need this
information in accepting the packet).

Regarding **Claim20,** Sainomoto discloses when there is a service failure in any
destination port, the transmitting port corresponding to the fault destination port is
modified into a backup port of the fault destination port*(page 10, par(0124), see Fig 17,*
shows packet routing apparatus. In FIG. 17, a route modifying unit 20 of the packet
routing apparatus further includes a failure monitoring unit 26).

Regarding **Claim21,** Sainomoto discloses all aspects of the claimed invention,
except *each destination port appears only once in the second table.*

Cassiday is the same field of invention teaches each destination port appears
only once in the second table *(column 2, If the primary link is a failed link, a secondary*

route table is queried to retrieve an alternative link, the data packet is stored in a failover

buffer when received at the first node and before the packet is routed to a failover

storage area, where the packet is temporarily stored in one of two data stacks, the data

packet is sent out by the selected transmitter(search out the transmitting port) by the

alternative physical link of the node(destination port)).

Regarding **Claim22,** Sainomoto discloses all aspects of the claimed invention,

except *the destination port appears a plurality of times in the first routing table.*

Cassiday is the same field of invention teaches the destination port appears a

plurality of times in the first routing table *(column 8, see Fig 6, shows, the structure of*

failover route tables, each node has a primary and route table, Each table is made up of

n rows and two columns, where n is the number of nodes in the network).

Regarding **Claim23,** Sainomoto discloses all aspects of the claimed invention,

except *the first routing table is not modified when there is a service failure in any*

destination port.

Cassiday is the same field of invention teaches the first routing table is not

modified when there is a service failure in any destination port *(column 2, The first table*

searched is a primary routing table to retrieve a primary link. If the primary link is a failed

link (not modified), a secondary route table is queried to retrieve an alternative link).

Regarding **Claim24,** Sainomoto discloses all aspects of the claimed invention, except *the data packet is not transmitted on the first transmitting port when a failure occurs in the first transmitting port.*

Cassiday is the same field of invention teaches the data packet is not transmitted on the first transmitting port when a failure occurs in the first transmitting port *(column 2, The first table searched is a primary routing table to retrieve a primary link. If the primary link is a <u>failed link</u> (not transmitted), a <u>secondary route table</u> is queried <u>to retrieve an alternative link</u>).*

4. - 6. (Canceled)

8.   **Claims 7, and 9, and 25-33** are rejected under 35 U.S.C 103(a) as being unpatentable over Sainomoto et al. (US 20020150114, Oct. 17, 2002) in view of Cassiday et al. (US 7042837, May 9, 2006) hereinafter (Cassiday et al).

Regarding **Claim7,** Sainomoto discloses a first routing unit *(page 10, <u>receiving the packet</u> from the at <u>least one port</u>; a <u>first lookup unit</u> (first routing table)* ; and a second routing unit *(page 10, a <u>second lookup</u> unit (second routing table)),* wherein the processor is configured to communicate with the first routing unit and the second routing unit, wherein the first routing unit is configured to save a first relationship between a data packet identifier and a destination port in a first routing table, and identify the destination port corresponding to the data packet identifier from the first routing table after receiving a data packet*(page 10, <u>receiving the packet</u> from the at <u>least one port</u>; a*

first lookup unit (first routing table)which uses header information contained in the

packet to judge whether the packet should be transmitted to the function unit, and adds

an identifier containing first route information corresponding to the function unit to the

packet in a case where the packet should be transmitted to the function unit; and a first

relay unit for transmitting the packet added with the identifier to the transmission unit),

and wherein the second routing unit is configured to save a second relationship

between the destination port and a transmitting port in a second table, and transmit the

data packet via the transmitting port corresponding to the destination port based on the

second relationship*(page 10, a second relay unit for receiving the packet from the*

transmission unit in accordance with the first route information contained in the

identifier; and a second lookup unit (second routing table) which receives the packet

from the at least one execution unit and uses the header information to store second

route information corresponding to a destination routing unit into the identifier; and

wherein the second relay unit transmits the packet to the transmission unit, the

transmission unit in accordance with the second route information contained in the

identifier; and the routing unit includes a transmission unit for transmitting the packet to

a destination port in accordance with the second route information contained in the

identifier).

Sainomoto discloses all aspects of the claimed invention, except *a network*

device, comprising a processor.

Cassiday is the same field of invention teaches a network device, comprising a

processor *(column 1, line 3-4, and a processor).*

Sainomoto and Cassiday are analogous art because they are from the same field of endeavor of access to a service device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Sainomoto to include the teaching of Cassiday because it is providing techniques for enabling the continued, realtime, transmission of data packets in a data network when a link in the network has failed.

8. (Canceled).

Regarding **Claim9,** Sainomoto discloses the second routing unit is further configured to search out the transmitting port corresponding to the destination port according to the second relationship*(page 10, a second lookup unit (second routing table) which receives the packet from the at least one execution unit and uses the header information to store second route information corresponding to a destination routing unit into the identifier; and wherein the second relay unit transmits the packet to the transmission unit, the transmission unit in accordance with the second route information contained in the identifier; and the routing unit includes a transmission unit for transmitting the packet to a destination port in accordance with the second route information contained in the identifier).*

10. - 18. (Canceled)

Regarding **Claim25,** Sainomoto discloses all aspects of the claimed invention,

except *the port number of the transmitting port is set to a port number of the destination*

port in the second table when the transmitting port is operating normally.

Cassiday is the same field of invention teaches the port number of the

transmitting port is set to a port number of the destination port in the second table when

the transmitting port is operating normally *(column 6, The <u>packet is modified to mark</u> it*

as a failover packet by setting a <u>failover-pkt bit</u>. The <u>CRC is then calculated</u> (based on

the modified packet) and attached. The ONID is embedded into this CRC in the same

manner as Sequence numbers are embedded. This is used <u>to uniquely oppositely mark</u>

the originator of the failover packet. AS will be seen, the <u>termination node</u> will need this

information in <u>accepting the packet</u>).

Regarding **Claim26,** Sainomoto discloses all aspects of the claimed invention,

except *when there is a service failure in any destination port, the transmitting port*

corresponding to the fault destination port is modified into a backup port of the fault

destination port.

Cassiday is the same field of invention teaches when there is a service failure in

any destination port, the transmitting port corresponding to the fault destination port is

modified into a backup port of the fault destination port *(column 2, A data packet is*

received at a first node having a <u>failed link</u> where the data packet is scheduled to use

the failed link, the link is chosen when the packet is pushed to the failover storage area.

When the packet is pushed to the failover storage area, an <u>alternate link</u> (backup port)

is selected for the data packet and the data packet is routed to a transmitter associated with the alternative link).

Regarding **Claim27,** Sainomoto discloses all aspects of the claimed invention, except *each destination port appears only once in the second table.*

Cassiday is the same field of invention teaches each destination port appears only once in the second table *(column 2, If the primary link is a failed link, a secondary route table is queried to retrieve an alternative link, the data packet is stored in a failover buffer when received at the first node and before the packet is routed to a failover storage area, where the packet is temporarily stored in one of two data stacks, the data packet is sent out by the selected transmitter(search out the transmitting port) by the alternative physical link of the node(destination port)).*

Regarding **Claim28,** Sainomoto discloses all aspects of the claimed invention, except *the order of the second relationship is set according to the sequence of the port numbers of the destination port.*

Cassiday is the same field of invention teaches the order of the second relationship is set according to the sequence of the port numbers of the destination port *(column 6, The packet is modified to mark it as a failover packet by setting a failover-pkt bit. The CRC is then calculated (based on the modified packet) and attached. The ONID is embedded into this CRC in the same manner as Sequence numbers are embedded. This is used to uniquely oppositely mark the originator of the failover packet. AS will be*

seen, the <u>termination node</u> will need this information in <u>accepting the packet</u>).

Regarding **Claim29,** Sainomoto discloses all aspects of the claimed invention,

except *the processor is configured to monitor each destination port in real time and*

modify the transmitting port corresponding to the fault destination port into a backup port

of the fault destination port when a service failure is found in the destination port.

Cassiday is the same field of invention teaches the processor is configured to

monitor each destination port in real time and modify the transmitting port corresponding

to the fault destination port into a backup port of the fault destination port when a

service failure is found in the destination port *(column 1, enabling the continued,*

<u>realtime</u>, transmission of data packets in a data network when a link in the network has

failed).

Regarding **Claim30,** Sainomoto discloses all aspects of the claimed invention,

except *the transmitting port is used to transmit other data packets regardless of whether*

a failure is associated with the destination port.

Cassiday is the same field of invention teaches the transmitting port is used to

transmit other data packets regardless of whether a failure is associated with the

destination port *(column 2, A row in the routing table corresponds to a neighboring node*

and at least one interconnect link for transmitting data to that node. These components

<u>enable the node</u> to continue with the <u>flow of a data packet</u> to a <u>destination port</u> without

(regardless) when an interconnect link along the path to that <u>node fails</u>).

Regarding **Claim31,** Sainomoto discloses all aspects of the claimed invention,

except *the first routing table is not modified when there is a service failure in any*

destination port .

Cassiday is the same field of invention teaches the first routing table is not

modified when there is a service failure in any destination port *(column 2, The first table*

searched is a primary routing table to retrieve a primary link. If the primary link is a failed

link (not modified), a secondary route table is queried to retrieve an alternative link).

Regarding **Claim32,** Sainomoto discloses all aspects of the claimed invention,

except *the destination port appears a plurality of times in the first routing table.* the

Cassiday is the same field of invention teaches destination port appears a

plurality of times in the first routing table *(column 8, see Fig 6, shows, the structure of*

failover route tables, each node has a primary and route table, Each table is made up of

n rows and two columns, where n is the number of nodes in the network).

Regarding **Claim33,** Sainomoto discloses all aspects of the claimed invention,

except *the data packet is not transmitted on the first transmitting port when a failure*

occurs in the first transmitting port.

Cassiday is the same field of invention teaches the data packet is not transmitted

on the first transmitting port when a failure occurs in the first transmitting port *(column 2,*

The first table searched is a primary routing table to retrieve a primary link. If the

primary link is a failed link (not transmitted), a secondary route table is queried to

retrieve an alternative link).

Response to Argument

9.   Applicant's arguments, see pages 8 to 14 of the Applicant's Remark, filed

04/20/2009, with respect to the rejection(s) of claims 1, 2, 7, 9, 19, and 25-35 under 35

USC § 102(e), claims 3, and 20-24 under 35 USC § 103(a) have been fully considered

and are persuasive. Therefore, the rejections have been withdrawn. However, upon

further consideration, a new ground(s) of rejections are made in view of Sainomoto et

al. (US 20020150114, Oct. 17, 2002) , Cassiday et al. (US 7042837, May 9, 2006).

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure are:

        Any inquiry concerning this communication or earlier communications from the

examiner should be directed to IQBAL ZAIDI whose telephone number is (571)270-

3897. The examiner can normally be reached on 7:30a.m to 5:00p.m.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, NGO RICKY can be reached on 571-272-3139. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

/Ricky Ngo/   IZ
Supervisory Patent Examiner, Art Unit 2464